

Ian Shanahan (1988–1991)

– *To Eric Gross and Peter Sculthorpe*

For Roslyn Dunlop, Daryl Pratt and Tony Cowdroy to play:

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# *Cycles of Vega*

for

sopranino clarinet in e $\flat$

and

percussion (2 players)

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PROGRAMME ANNOTATION

Cycles of Vega

for e♭ clarinet and percussion

Ian Shanahan (1988–1991)

In what may well become an ever-expanding set of compositions for wind and percussion instruments, **Cycles of Vega** is intended to be a 'companion piece' to an earlier work of mine: **Echoes/Fantasies** (1984), for bass clarinet, vibraphone(s) and tubular bells. Both of these compositions make use of various complex long-range cyclic transformations – hence the present work's name – as well as embracing related musical materials and structures.

The title "Cycles of Vega" makes oblique reference to my longstanding astronomical interests. Vega (α Lyrae), the brightest object in the 'musical constellation' Lyra, will become the Earth's north celestial pole-star sometime around 14,000 AD – since Earth's polar axis inexorably describes, or cycles through, a vast circle in the sky every 25,800 years or so. Considered to be the greatest astronomer of antiquity and the founder of systematic observational astronomy, Hipparchos of Nicaea (fl. 146–127 BC) was allegedly the discoverer of this diurnal cosmic process (referred to as 'precession') – although an explanation of precessional behaviour was not forthcoming for at least another 1,800 years, with the advent and codification of Newtonian mechanics! (Rotating bodies then perhaps began to be understood, a little...) At any rate, the (epi)cyclicity discernible within **Cycles of Vega** is certainly a 'precessional metaphor'. Intended to proclaim our Universe's grandeur, I trust that **Cycles of Vega** is not just some lifeless 'acoustical orrery', but is, rather, a truly vibrant model of the Cosmos it extols.

Much to my delight, I have learnt that the star Vega possesses a rich cultural history; its name is resonantly polysemic. According to Richard Hinckley Allen:*

The association of Lyra's stars with a bird perhaps originated from a conception of the figure current for millenniums in ancient India – that of an Eagle ... But the Arabs' title, *Al Nasr al Waki* – Chilmead's *Alvaka* – referring to the swooping Stone Eagle of the Desert, generally has been attributed to the configuration of the group α, ε, ζ [Lyrae], which shows the bird with half-closed wings ... Sayce identifies Vega, in Babylonian astronomy, with *Dilgan*, the Messenger of Light ... Owing to precession, it will be the Polaris of about 11,500 years hence, by far the brightest in the whole circle of successive pole-stars, and then 4.5" from the exact point, as it was about 14,300 years ago ... [Vega] was the first star submitted to the camera, by the daguerreotype process, at the Harvard Observatory on the 17th of July, 1850.

Moreover, the theologian E. W. Bullinger claims that the star-name Vega "means *He shall be exalted*".† And I also recall that in the science-fiction novel **Contact**,‡ written by the celebrated cosmologist Carl Sagan, modern radio astronomers first detect intelligent extraterrestrial life through the reception of a sequence of prime numbers transmitted from Vega!

Anyway, I try to evoke, within the sound-world of **Cycles of Vega**, an extremely unearthly, timeless, cosmic, astral state. In large part, this is achieved through the use of a rather unusual (even idiosyncratic) instrumentation – which includes twenty(!) varieties of windchime, seven *rin* (Japanese temple bells) and tubular aluminium sound-sources that I have constructed and assembled myself ("Shan Tubes"), as well as a number of other metallic percussion instruments. (Some of these instruments' microtonal tunings, and the e♭ clarinet's technical treatment in general, additionally indicate an attempt on my part 'to look ahead' musically and aesthetically, liberated from the artificial restrictions of the past.)

The fascinating stochastic behaviours at play within the windchimes themselves – a prominent element of the piece, simply because these instruments are so numerous – provide a metaphorical mirror for the complex tumultuousness of the Cosmos itself: Cosmological Entropy, Chaos, and the Second Law of Thermodynamics ... as well as the seemingly random chaotic perturbations – 'nutation' – of the Earth's polar axis, which wobbles periodically in conjunction with the precession-of-the-equinoxes phenomenon, itself evinced by equinoctial points retrogressing ever so slowly along the ecliptic. (Such labyrinthine concepts, exhibiting 'disorder within meta-order', are encapsulated beautifully by James Joyce's neologism "chaosmos"!)

Furthermore, the intricate structural hierarchies woven into **Cycles of Vega** could perhaps be interpreted as an (admittedly gross) simplification, essence, sign, or symbol of the infinite architectonic nature of God's Universe.

Cycles of Vega was commissioned by the Australian clarinetist Roslyn Dunlop, with funds provided by the Performing Arts Board of the Australia Council for the Arts; it is gratefully dedicated to Ros – and also to two of my former composition teachers, Eric Gross and Peter Sculthorpe, at the University of Sydney.

© Ian Shanahan, Sydney, Australia; 10 March 1990.

* Richard Hinckley Allen: **Star Names: Their Lore and Meaning** (Dover Publications, Inc., New York, 1963; ISBN 0-486-21079-0), pp.282–286.

† Ethelbert William Bullinger: **The Witness of the Stars** (Kregel Publications, Grand Rapids, Michigan, U.S.A., 1995; ISBN 0-8254-2245-0), p.66.

‡ Carl Sagan: **Contact: A Novel** (Arrow Books Ltd., London, 1986); ISBN 0-09-950780-3.

Cycles of Vega was premièred by Roslyn Dunlop (e♭ clarinet), Daryl Pratt (percussion), and Anthony Cowdroy (percussion), during the Second Sydney Spring International Festival of New Music, held at the Art Gallery of New South Wales, Art Gallery Road, The Domain, Sydney, on 2 November 1991. The composer was subsequently awarded **The Adolf Spivakovsky Memorial Prize for Composition** (1991), for **Cycles of Vega**.

A recording of **Cycles of Vega**, played by the same personnel, is now commercially available on the Compact Disc "Shoalhaven Suite" (Broad Music Records Jade JAD CD 1087).

HIPPARCHOS

Cycles of Vega,
stately precession:
Axial changes so slow.

Azimuth rising,
Pole Star declining:
spinning-top Earth 'round you go!

I. L. Shanahan, 31.8.1989.

PERFORMANCE NOTES

PREAMBLE

I wish to thank *Roslyn Dunlop* for her research assistance, for her kindness in demystifying the subtleties of the *e♭* (sopranino) clarinet for me, as well as her patient editorial guidance later on in the compositional process – particularly in relation to the deployment of many unusual *e♭* clarinet fingerings throughout **Cycles of Vega**. I am also greatly indebted to *Daryl Pratt* who, as usual, was keen to share his immense knowledge of the percussion genre and how to compose intelligently with it: for example, in deciding upon the layout and distribution of the percussion instruments in **Cycles of Vega** (thereby ensuring that mallets and percussion instruments would always remain compatible), Daryl's expert advice was invaluable. I thank him for his affable generosity.

1. GENERAL REMARKS

INSTRUMENTATIONAL REQUIREMENTS

• *Sopranino Clarinet in e♭*

• *Percussion (2 players)*

Percussion 1

- vibraslap {at rest on the mallet-tray}
- large autocoil {suspended high}
- very large triangle {suspended high}
- crotales (one octave set) {rack-mounted}
- vibraphone (*optional*: employ an assistant to regulate its rate of vibrato)
- 4 cowbells {rack-mounted}
 - 2 agógo bells
 - 2 cencerros
- 6 large-diameter "Shan Tubes" {suspended very high} *
- 3 suspended cymbals {all suspended on cymbal stands, but ideally grouped together in vertical order upon a single cymbal stand} †
 - 1 large sizzle cymbal
 - 1 large Chinese cymbal
 - 1 very large (Turkish) suspended cymbal

Percussion 2

- 3 suspended cymbals {all suspended on cymbal stands, but ideally grouped together in vertical order upon a single cymbal stand} †
 - 1 large sizzle cymbal
 - 1 large Chinese cymbal
 - 1 very large (Turkish) suspended cymbal
- dove call in C {hanging from a string, around the percussionist's neck!}
- vibraslap {at rest on the table with the rin}
- 8 windchimes, activated mainly by the percussionist's right hand {all suspended high}
 - 1 aluminium-tube windchime
 - 1 ceramic-disc windchime
 - 1 brass-bell windchime
 - 1 shell-disc windchime
 - 1 wooden-rod windchime
 - 1 bamboo-tube windchime

- 1 sea-urchin-spine windchime
- 1 herd-bell windchime
- 'triangle windchime' (3 triangles) {suspended high}
- 6 small-diameter "Shan Tubes" {suspended very high} *
- 7 Japanese temple bells (rin) {resting upon their traditional cushions, on a (cloth-covered) table}
- sleighbells {suspended high}
- 9 windchimes, activated mainly by the percussionist's left hand {all suspended high}
 - 1 wooden-rod windchime
 - 1 bamboo-tube windchime
 - 1 sea-urchin-spine windchime
 - 1 shell-disc windchime
 - 1 'Kenyan bell tree'
 - 1 ceramic-disc windchime
 - 1 brass-tube windchime
 - 1 aluminium-tube windchime
 - 1 brass-disc windchime
- very large tam-tam {suspended in a frame}

Note: technical specifications with detailed descriptions of all of these percussion instruments shall be given later; I have also appended to these Performance Notes a comprehensive diagram depicting their *physical layout*.

* Both sets of "Shan Tubes" require *very high* stands – reaching at least 2 metres above the floor! The "Shan Tubes" themselves are suspended in much the same manner as a set of commercially manufactured tubular bells, from many small hooks screwed into a pair of flat home-made rectangular wooden racks. However, in performance, these suspension-racks *must* be placed close enough together so that each set of "Shan Tubes" physically interacts with the other set, as a kind of single 'super windchime', at the climax of **Cycles of Vega** (bar 177).

† Note that until bar 39 in **Cycles of Vega**, both percussionists are able to share the same set of three (suspended) cymbals: duplicate instruments are therefore not needed (although their presence would serve to expand this composition's timbral spectrum).

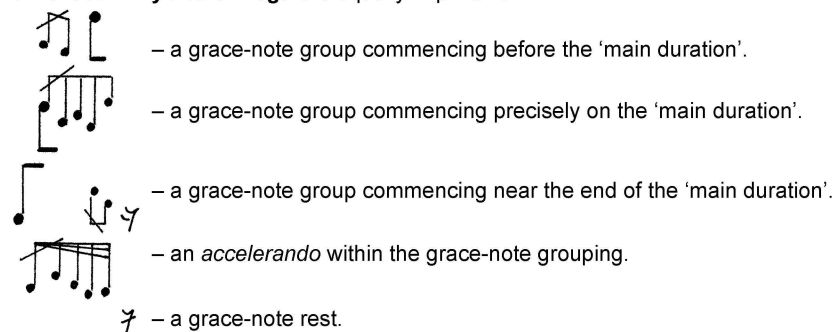
ADJUSTMENT OF TEMPI, AND DURATION

If the fastest tempi specified in **Cycles of Vega** prove to be overwhelming for the performers, then decrease *all* tempi *proportionately*, by the same factor – lest the work's architecture be distorted. (Likewise, the duration of each pause lasting a given number of seconds will need to be multiplied accordingly.) This is by no means a desirable circumstance, for the designated tempi are optimal and preferred: I therefore encourage all executants to work up to playing **Cycles of Vega** at these tempi!

Cycles of Vega embraces extremely subtle, long-range *accelerandi* and *decelerandi* (bars 12–36; bars 86–178; and bars 180–214), the contours of which are defined by approximate tempo-indications every bar or so. In order that performers attain the required shapes of these tempo-contours fairly accurately, they are advised to repeatedly 'count through' the piece with an *electronic metronome*, turning the device's dial correspondingly. This practice activity will greatly assist projecting, in concert, the right 'feel' of tempo-evolution. Of course, a certain degree of flexibility is permissible, provided that the general contours of tempi are preserved overall. Additionally, approximate durations (in minutes and seconds) of subsections of **Cycles of Vega** have been supplied, both singly and cumulatively, as an aid to executants in this respect.

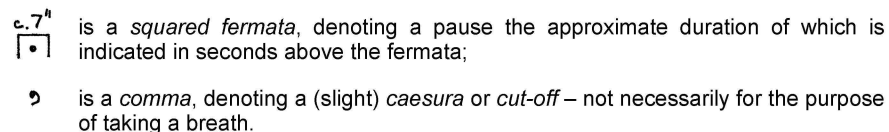
GRACE-NOTE GROUPS

Grace-notes occupy (very) short indeterminate durations, which are left to the discretion of the player. In general, they should be played quite rapidly (but not necessarily evenly), at a speed somewhat dependent upon local context and other instructions or technical exigencies. Grace-notes marked "agile" or "rapid" (etc.) should be interpreted accordingly, or even played 'as fast as possible' ("a.f.a.p."). Furthermore, grace-notes ought not to be thought of as mere 'ornaments', of secondary architectonic status, to the 'main notes': *all* sonorities in **Cycles of Vega** are equally important!



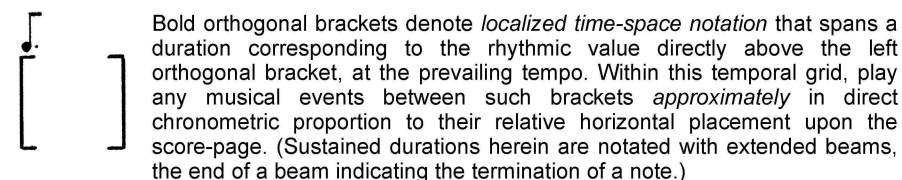
PAUSES

Unless otherwise indicated, precise durational details of pauses are left to the interpretation of the performers. The following symbology is employed:



The durations of other pauses – given as a squared fermata alone (≡) – are determined entirely by instrumental characteristics or other acoustical properties: e.g. "Pause until the Tam-Tam resonance is 'pp'"; etc. (The appropriate textual instruction is always provided in conjunction with the squared fermata.) Sustained (approximate) durations within the ambit of such pauses are notated time-spatially – i.e. extended *beams* depict such local durations; the end of a beam indicates the termination of a (previously sustained) note.

LOCALIZED TIME-SPACE NOTATION



DYNAMIC INDICATIONS

Apart from the traditional dynamic indications (*ppp*, *pp*, *p*, *mp*, *mf*, *f*, *ff*, *fff*), the following symbols are employed in **Cycles of Vega**:

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p poss. and *f poss.* are abbreviations for 'as soft as possible (but still audible)' and 'as loud as possible', respectively;

<> >< small '*hairpins*' (*crecendi* and *diminuendi*, without any other dynamic indications) signify a very subtle nuance of dynamic variation around the prevailing dynamic level;

o represents the initial emergence from, or final vanishing into, *inaudibility*;

Dynamic indications apply until they are modified by the next dynamic instruction. Moreover, a proper balance of dynamics between instruments ought to be maintained throughout **Cycles of Vega**: for example, the perceived loudness of an *mf* sonority in one part should match that within the other two parts.

ARTICULATIONS AND ACCENTS

All articulations – *legato*, *tenuto*, *mezzo-staccato*, *staccato*, *staccatissimo*, *accent* (>), *sforzando* (^) etc. – should be duly observed. For the purposes of **Cycles of Vega**, a *tenuto* marking (–) is simply to be understood as a direction to sustain a sonority for its *full duration* as given (or even a little longer), and *staccatissimo* denotes a very short, clipped envelope (i.e. '*molto staccato*'); neither *tenuto* nor *staccatissimo* in themselves imply the application of *any* additional accent or stress whatsoever in the attack, unless otherwise indicated. Moreover, a *sforzando* attack will always be based upon the prevailing dynamic level, so that (for example) *sffz* = *sforzando* in *ff*.

QUARTERTONES, OTHER MICROTONES, AND PITCH DESIGNATION

The following symbology for *microtones* is employed in **Cycles of Vega**:

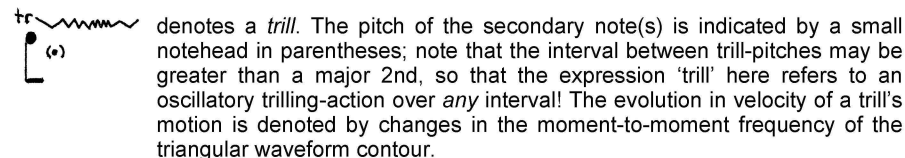
and ↓ denote a *quartertone above* ♮, and a *quartertone below* ♮, respectively (i.e. 24-tone equal temperament). Arrowheads upon any accidentals denote slight intonational deviations – up to about an eighthtone, but not necessarily tempered – in the given direction.

In any *textual references* to pitch herein:

– "Middle C" shall be designated as C♮3, the C♮ one octave higher as C♮4, etc. (i.e. assuming that A♮3 = 440 Hz, then C♮3 ≈ 261.6255653 Hz).

– # and ↓ denote a *quartertone above* ♮, and a *quartertone below* ♮, respectively. Smaller degrees of intonational deviation – slight microtonal inflections, non-tempered, of up to about an eighthtone – upwards and downwards are indicated by upward-pointing and downward-pointing arrowheads, respectively, upon accidental symbols. Examples: B♮5; F♯4; A♭3; G♮2 etc.

TRILLS



In relation to trill-speed, "a.f.a.p." is simply an abbreviation for 'as fast as possible'.

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RANDOMIZED PARAMETERS

“Rand.” denotes the random treatment, over a specified duration, of individual, clearly indicated technical/musical parameters. Such parameters operate independently of one another when more than one parameter is so engaged. “Rand.” may be applied to the trilling-action of a (sub)set of fingers in a clarinet fingering, to the frequency modulation (i.e. speed-changes) in a trill or clarinet key-vibrato, or to the vibraphone’s vibrato-rate between given upper and lower limits, for instance.

CUEING ONE ANOTHER WITHIN BAR 39

Within each part comprising the *single, fluidly shaped macro-event* that spans bar 39 in **Cycles of Vega**, instructions are provided for *cueing or reacting to one another* – either as an instantaneous response to one musical gesture, or as a trigger for another executant to immediately perform some other musical gesture. Such ‘aural catalysts’ are notated as *large bold arrows*, together with the name of another instrument (and, if necessary, a technical description of what is being played upon that instrument) written nearby.

Elsewhere throughout **Cycles of Vega**, all interpreters are encouraged to discover, thence to notate within their own parts, additional points in the music when cueing one another *for the sake of accurate coordination* might prove salutary.

VISUAL IMPACT AND LIGHTING IN CONCERT

The gestural/theatrical aspect inherent within the instrumental set-up and public presentation of **Cycles of Vega** must *enhance* the music, not impede or contradict it. All physical gestures and actions must be seen to be deliberate, fluid, and totally controlled: this sort of ‘effortless theatricality’ is crucial, for instance, in the second percussionist’s performance upon their numerous windchimes (bars 1–179) – lest they appear instead to be merely a child running amok in its play-pen! Furthermore, the percussionists should pick up any mallets (or hand-held instruments, such as the vibraslap) as discreetly and unobtrusively as possible.

In mounting a performance of **Cycles of Vega**, I do encourage the artistic use of stage lighting and spotlights (of various hues), so long as they are employed *tastefully*. Such visual effects must enhance the cosmic, other-worldly soundscape of this piece!

2. THE SOPRANINO CLARINET IN E♭: DETAILS

E♭ CLARINET FINGERINGS

Every fingering-indication provided within the score of **Cycles of Vega** that *supplies the notated pitch(es) accurately over the given duration* is to be strictly adhered to: any modifications of such fingerings are forbidden! But whenever a fingering yields an unacceptably inaccurate outcome, or is acoustically untenable on a particular instrument, then the clarinetist is at liberty to alter that fingering – subject to the proviso that the resultant sonority matches, as closely as possible *in context*, the composer’s original intention. (If no such fingering exists, then just do your best with the provided fingering.) So, whatever fingerings end up being employed herein, the sonic results must always correspond as closely as possible to the notated pitches while retaining, as much as possible, the original timbral signatures generated by the specified fingerings.

Non-standard fingerings for *chromatic pitches*, for *tempered quartertones and other microtones*, and for *multiphonics* found in **Cycles of Vega** are appended within a prefatory

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table – to aid the clarinetist in checking their intonational accuracy, to assist in the familiarization process, and for general practice purposes.

MULTIPHONICS

The notation of e♭ clarinet multiphonics in **Cycles of Vega** is necessarily incomplete: sidebands, such as ‘difference tones’, have been excluded. Nonetheless, the pitches of the highest and lowest component tones (the primary audible pitches) are carefully notated, and should therefore be fairly accurate in performance; this can be ascertained by playing through the abovementioned table. If, however, any *infinitesimal* pitch-discrepancies do occur in playing these multiphonics on your instrument, then they can be ignored!

The *steadiness* of (unstable) e♭ clarinet multiphonics is not a high priority: unless otherwise indicated, a reasonable degree of ‘inner fluctuation’ is acceptable. Similarly, it is my intention that certain *slow-speaking* multiphonics might be heard only incipiently, whenever their specified durations are insufficient to fully secure and stabilize all of their constituent pitches simultaneously.

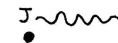
VIBRATO

If used at all when not specifically called for, vibrato on the e♭ clarinet should be employed with considerable discretion throughout **Cycles of Vega**. Air-column vibrato (generated by pulmonic action), or perhaps even jaw-vibrato, is recommended; unspecified key-vibrato is, however, forbidden!

The following vibrato-types are called for at specific points in the music:

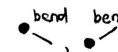


denotes a *key-vibrato*. Its fingering and trilling-action is specified by the tablature pictograph above the staff. The triangular waveform contour suggests micro-details of the key-vibrato’s frequency, which may be static or evolving. The emphasis here is upon *timbral* oscillation – although some small microtonal fluctuations may be evident as well. All e♭ clarinet key-vibrati employed in **Cycles of Vega** have been appended within a prefatory table, the rationale for selecting each key-vibrato’s fingering being that it achieves maximal timbral alteration with a minimal pitch-shift, wherever possible.



denotes a *jaw-vibrato*. Repeatedly inflect the given note’s pitch with the embouchure and/or through oral-cavity manipulations. The sinusoidal waveform contour suggests micro-details of the jaw-vibrato’s frequency and amplitude (i.e. the extent of pitch-alteration around the given note), either of which may be static or evolving. Precise details concerning the (maximum) width of pitch-inflection are left to the discretion of the clarinetist.

PITCH-BENDS AND PITCH-INFLECTIONS



denote downward and upward *pitch-bends*, respectively – they are executed with the embouchure and/or through oral-cavity manipulations. (Ameliorative changes of fingering-configuration during a pitch-bend are permissible, so long as the pitch-bend itself sounds perfectly smooth.) Pitch-bends should always be carried out towards the end of the indicated duration; moreover, the termination of the ‘bent’ tone must never be emphasized. Soft (diminuendo) downward pitch-bends are to be reminiscent of a sigh, as if the clarinetist is running out of breath! Precise details concerning the range of

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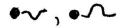
the pitch-bend are left to the discretion of the clarinetist.



In exactly the same manner as above (including permissible changes of fingering-configuration), bend the tone upwards as far as possible, smoothly.

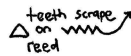


denotes a 'fall-off' – a pitch-bend falling downwards as far as possible or practicable, using finger-action as well as embouchure and/or oral-cavity manipulations. Allow the tone to break down and smear into lower registers as well!



denote downward and upward *pitch-inflections*, respectively. These are equivalent to their pitch-bend counterparts – except that the pitch promptly returns to the initial given pitch, as shown. The timing of the pitch-inflection within the note's overall duration is clearly indicated on each occasion.

TEETH-ON-REED



By placing your lower teeth directly upon the e♭ clarinet's reed, project a thin, piercing, rather unstable but extremely high-pitched (indeterminate) sound; include changes in embouchure-pressure as well. Then scrape your lower teeth up and down over the reed's surface, to create a rough 'broken portamento' effect, including random changes of partial. End the event on as high a pitch as possible, as shown. (Note that such sound-production activities evolve independently of fingering considerations.)

ARTICULATION

The following special articulations for the e♭ clarinet are utilized in **Cycles of Vega**:



denotes *fluttertonguing*, a trilling of the tongue-tip against the alveolar ridge, or alternatively, a trilling of the back of the tongue against the uvula (soft palate) – as in gargling. Either type of fluttertonguing is acceptable within **Cycles of Vega**: the type, intensity, and speed of the fluttertonguing to be employed at each occurrence are left to the discretion of the clarinetist.



denotes a *slaptongue*. Place a large portion of your tongue against the reed, thereby creating a vacuum between the surface of your tongue and the reed. Suddenly 'break' this vacuum by pulling your tongue down away from the reed – this is often accompanied by a drop in jaw-pressure – whilst simultaneously initiating the air-stream. Such actions on an e♭ clarinet should result in a very strong, almost percussive attack to a normally-blown note: this instrument's reed is simply too small to generate the characteristic 'thud' of a larger reed noisily rebounding against the mouthpiece, as in a bass clarinet slaptongue. The clarinetist should vary the slaptongue's intensity in accordance with the indicated dynamic level.



denotes an *aspirated attack*, with minimal intensity, using the phoneme 'h' (as in "hamster"): the sonority is to be rendered *without any 'tonguing' whatsoever!*



denotes a *diaphragm thrust*. Attack the note with a sharp jolt or impulse from the diaphragm only; do *not* 'tongue'. Again, the articulatory action here is entirely aspirated and pulmonary – but with the aspiration being suitably intensified and heavily accentuated.



denotes a rising *pitch-bend (portamento) attack*, executed at the beginning of, or immediately prior to, the indicated duration: the technique needed here is precisely the same as that required to produce a pitch-bend (see above). The pitch-range covered by this smooth, upward 'scoop' into the note is left to the discretion of the clarinetist.



denotes a (very) brief '*squawk*' *attack* – involving any (very) high pitch elicited from, or somehow related to, the fingering for the primary note, overblown. This colourful attack can be achieved by momentarily touching your lower teeth against the reed; or perhaps better still, curl your lower lip back behind the reed and behind your upper teeth, and with sufficiently high breath-pressure, then allow your lower lip to be blown forward, bursting explosively into its normal embouchure position, thereby yielding a particularly dramatic, raucous overblown attack. The sound, as I have imagined it while composing **Cycles of Vega**, is merely an inseparable part of the note's attack characteristic, and so ought to resemble the occasional transient squeak/squawk noises of a tenor or baritone saxophone that occur sometimes at a change of register in playing jazz.

AIR-SOUNDS



denotes an *air-sound*, in which the given (first-register) pitch is fingered while air is blown through the e♭ clarinet with a loose embouchure that is insufficient to cause the generation of a normally-produced tone: a breathy tube-resonance with a clearly discernible pitch-centre (corresponding to the fingering's fundamental mode of vibration) ensues. Note that an air-sound's timbral quality may be modified in a quite subtle but continuous manner through fluctuations in breath-pressure, or by varying the embouchure and the shape of the oral cavity: the sensible application of these techniques is left entirely to the discretion of the clarinetist. Whenever the circular notehead is drawn non-specifically beneath the staff (bars 1–35), the air-sound's pitch-bias is indeterminate.



denotes a normally-produced tone that contains *strong air-coloration* (i.e. 'breathiness').



denotes a *transition* from a 'pure' tone (containing no air-coloration) to an air-sound.



denotes a *transition* from an air-sound to a 'pure' tone (containing no air-coloration).

KEY/FINGER-SOUNDS



denotes a *key/finger-sound*, in which the e♭ clarinet's key-mechanism is made audible and/or tube-resonances are generated by keys/fingers slapping shut *hard* over their holes, in addition to the blown tone. In trilling actions, an x is drawn above the triangular waveform contour; the finger(s) engaged in the ongoing percussive activity are usually identified with an x in the tablature pictograph. A *transition* to prominent key/finger-sound (*f poss.*) is indicated by ----- x.

3. THE PERCUSSION INSTRUMENTS: DETAILS

PREAMBLE

Cycles of Vega calls for a number of highly exotic and/or extremely rare – even unique

– percussion instruments. Therefore, in order not to make this piece's realization prohibitively difficult, I propose the following practical solutions:

- Many of these percussion instruments can be obtained directly from the composer.
- Alternatively, percussion instruments such as the windchimes and the "Shan Tubes" can easily be constructed according to the detailed specifications provided herein.
- Some substitutions are permissible; specific suggestions will be made later in this regard.
- Electroacoustic sound-production (e.g. digital sampling and the activation of samples with MIDI percussion instruments – or even digital synthesis and signal processing with a synthesizer or computer, rather than sampling) is another viable possibility, if certain percussion instruments are definitely unavailable; this is by no means an 'ideal solution' (either acoustically or visually), though.

It is crucial that the microtonal tunings of many of the percussion instruments described below be preserved *at all costs*: these particular micro-intonations were very much fixed in my 'mind's ear' throughout the composition of **Cycles of Vega**; it is, therefore, obligatory that instruments which conform as closely as possible to these tunings be procured! Note that certain percussion instruments whose pitches *almost* match those designated may in fact be inflected accordingly: for example, some rin pitches could be flattened somewhat by pouring a certain amount of water into the rin (although the water's inertia does entail an undesirable loss of rin resonance); cowbell pitches may be flattened similarly by adhering some extra weight (e.g. large lead fishing sinkers embedded within a malleable gummy substance such as "Plasticine" or "Blutac") inside the cowbells, etc.

RESONANCE AND ARTICULATION

- ~ Allow the note(s) to *resonate beyond their specified duration*. Unless otherwise directed, such notes should be allowed to resonate until their sound has completely dissipated. The complex aleatoric sound-textures of all *windchimes* (and cognate instruments) must always be permitted to decay into silence!
- ◇ denotes *damping* the resonance of the specified instrument(s) – by hand, or with a mallet – *to silence* after it has been struck, at precisely the moment in time corresponding to the rhythmic placement of the closed-diamond notehead.
- * denotes a '*deadstick*'. Once the mallet has struck a sound-producer of an instrument, it remains in physical contact with the strike-point, without rebounding, thereby muffling or damping any after-resonance. In **Cycles of Vega**, this technique is applied only to the vibraphone (in "non Ped."). The resultant vibraphone sound's envelope will thus be a fairly brief 'choked' staccato.
- (*) A parenthesized × – (×) – upon a vibraphone note's stem denotes '*deadsticking*' if at all possible.
- ≡ denotes a *tremolo* using (at least) two mallets.

ARPEGGIATION

- ↗ – *arpeggiate* the notes in a somewhat leisurely manner.
- ↘ – (*very*) *rapidly* arpeggiate the notes of the chord.

For both forms of *arpeggiation*, their speed of execution is left to the discretion of the performer. *Arrowheads* upon the above symbols indicate the *direction* of the arpeggio's action: ↑ = play the *lowest pitch* of the chord first; ↓ = play the *highest pitch* of the chord first.

GLISSANDI



denotes a *glissando*, in the given direction. The glissando's initial (parenthesized) note should not be accentuated or individually attacked; the glissando's ending-note – likewise played with absolutely *no* emphasis – is indeterminate, but corresponds vaguely to the point where the glissando's line-contour terminates with an arrowhead: such glissandi usually cover as wide a range as possible. Whenever this arrowhead is replaced by a regular notehead in parentheses, the glissando's ending is now, of course, clearly specified; however, exactly as with the glissando's initial note, this final note must not at all be attacked individually.

The actions of all glissandi in **Cycles of Vega** *always span the entire duration as notated*.

Any accidental in front of a glissando's initial pitch (i.e. 'sharp' [♯] or 'flat' [♭], or 'natural' [♮]) unambiguously indicates whether the glissando-action shall take place upon a keyboard percussion instrument's 'white' (diatonic 'natural') or 'black' (pentatonic 'accidental') notes.

MALLETS

The following pictographs illustrate the different types of percussion mallet called for throughout **Cycles of Vega**. Drawn together in various combinations *within rectangular boxes*, such pictographs show the number, type, and deployment between the left and right hands of mallets required over each section of the music; no more than two mallets per hand are ever needed. Usage of the 'plus' and 'minus' symbols (+, −) in this context indicates a straightforward temporary change from the basic mallet-configuration. In relation to certain percussion instruments (such as the autocoil and the crotales), a mallet pictograph marked "sempre" means that henceforth, until further notice, only the indicated mallet-type is to be used to elicit sound from this instrument. Otherwise, a non-boxed mallet pictograph just refers to a specific percussion instrument and note.

Note: L.H. = the left hand; R.H. = the right hand.

PERCUSSION 1



denotes a *very hard and heavy brass glockenspiel mallet*.



denotes a *yarn-wound vibraphone mallet of medium hardness*.



denotes the **vibraslap**, held by the right hand (bars 4–36)! Strike the specified percussion instruments with the vibraslap's hard wooden ball!



Play the vibraphone glissando with the very end of the vibraphone mallet's rattan/cane handle (bar 39)!

PERCUSSION 2



denotes a very hard and heavy brass glockenspiel mallet.



denotes a large, (very) soft tam-tam beater. This tam-tam beater should be carefully suspended from the tam-tam's frame in such a way that the beater's interference with (damping of) the tam-tam's resonance, after the tam-tam has been struck, is non-existent or negligible.



denotes a very hard plastic (or heavy brass) glockenspiel mallet.



denotes a yarn-wound vibraphone mallet of medium hardness.



denotes an authentic hard wooden rin beater (*not* the soft, suede- or kidskin-bound variety); such beaters usually accompany the rin themselves. This quite rare type of beater resembles a short wooden rod, about 150 mm long, wrapped lightly with thin colourful cloth: if it is unavailable, then substitute an ordinary hard wooden or hard plastic mallet instead.

PERCUSSION INSTRUMENTS: DETAILED DESCRIPTIONS AND ABBREVIATIONS

Within the two percussion parts, all of the percussion instruments are notated in sequential order according to their physical distribution; they are listed below in the same fashion.

PERCUSSION 1

Vibraslap: **Vbslp**

Select a vibraslap with as wide a dynamic- and resonance-range as possible! A metal vibraslap (with a wooden ball) is quite acceptable.

Large Autocoil: **Coil**

A large helical spring, from the front-end suspension of a car, hung up high by a leather bootlace. An arrow to the left of a notehead indicates a sweeping rasp-like 'arpeggiando' attack (either upwards or downwards) that dramatically runs along the whole length of the helix, striking most (or all) loops in rapid succession; otherwise, for the coil's normal mode of performance, tap just a single loop.

Very Large Triangle: **Tri**

Use the largest triangle you can possibly find, suspended high! (Its timbre must be quite different to that of the large autocoil.)

Crotales: **Crot**

Written range: C \sharp 4 — C \sharp 5, sounding two octaves higher than notated. The thirteen crotali should be rack-mounted, in the manner of a keyboard. If preferred however, a set of thirteen rack-mounted crotali sounding one octave lower than those described above (i.e. with the written range C \sharp 4 — C \sharp 5, but sounding just one octave higher than notated) may be employed instead. This lower-octave set of crotales will certainly possess a greater resonance and longer decay-times than the higher-octave set; in any case, the actual sounding octave of crotales does tend to be somewhat ambiguous to the ear.

Vibraphone: **Vib**

Range: F \sharp 2 — F \sharp 5. A high-quality modern instrument (with wide bars in the low register) is required. The vibraphone must also be equipped with an electric motor and potentiometer that will yield a continuously variable speed of vibrato — widely ranging from 'slow' to 'fast'; an

instantaneous vibrato on/off capability, activated by a switch and/or by the potentiometer, is needed as well. Indeed, the vibraphone's vibrato must be able to be turned on or off with the potentiometer alone: for instance, this faculty is crucial for the initial vibrato accelerando, in bar 44.

Vibraphone Vibrato: Rates of vibrato on the vibraphone are specified by ringed numbers: ① indicates non-vibrato (i.e. 'motor off'); ⑥ signifies the vibraphone's maximum vibrato-frequency; ① and ② \approx 'slow' vibrati; ③ and ④ \approx 'medium' vibrati; and ⑤ \approx a 'fast' vibrato. Between the extremes of ① and ⑥, the numbers ①, ②, ③, ④, and ⑤ denote approximately equal gradations of vibrato-rate; hence, each of these numbers is perhaps best thought of as a narrow bandwidth of vibrato-frequencies, so that ③ (for example) does not designate a precise, fixed rate of vibrato for each of its occurrences. When the vibraphone's motor is turned off (i.e. to ①: non-vibrato), do please remember also to rotate the vibrato-discs at the top of the instrument's resonators to their vertical position — in order to capture the vibraphone's maximum degree of sonorousness. Smooth transitions between numbered rates of vibrato (i.e. vibrato accelerandi or vibrato rallentandi) are depicted by appropriately sloping dashed lines which connect the ring around one vibrato number to that around the next. NB: It is most probably advantageous to employ an assistant whose sole purpose will be to manipulate the vibraphone's potentiometer, and thus regulate its rate of vibrato.

Vibraphone Pedalling: All pedalling on the vibraphone is clearly indicated throughout **Cycles of Vega**. "non Ped." must be strictly observed! (No damping of resonance by hand is called for anywhere in this work.)



Glissandi across the Vibraphone's Resonator Tubes: Using the ball of the vibraslap, execute an extremely violent glissando across most or all of the vibraphone's resonator tubes, sweeping from left to right, starting with the resonator tube for F \sharp 2 — a very aggressive, quite ugly rasping sound (bars 4–36)! Do allow the vibraslap to resonate fully as well, please.

4 Cowbells: **Cowb**

Two agogo bells (Cowb 1 & 2) and two cencerros (Cowb 3 & 4), rack-mounted. The agogo bells may be replaced by cencerros, herd bells, almglocken, metal blocks or other forms of cowbell, if desired. Do not muffle or mute the cowbells in any way! The cowbells' timbre should be rather clangorous, not too mellow — although their given pitches must be readily distinguishable. The four cowbells utilized for the world première performance of **Cycles of Vega** were pitched as follows: **1** — B \sharp 4; **2** — G \sharp 4; **3** — G \sharp 4; **4** — F \sharp 4.

6 Large-Diameter "Shan Tubes": **ShTL**

These home-made metallic percussion instruments — which resemble large-diameter tubular bells (but are instead able to sway quite freely, as a kind of windchime) — are mostly struck individually, with vibraphone mallets. They all project a slightly 'dirty' gong-like sound — akin to that of the Javanese gamelan kettle-gongs known as 'kethuk'. It is of no consequence that "Shan Tubes" struck with mallets may themselves strike other "Shan Tubes" — although, if possible, this sort of knock-on effect really should not occur during low dynamic levels. A stem with a ^ drawn upon it denotes striking a large-diameter "Shan Tube" near its point of suspension: aside from timbral considerations, such a strike-point minimizes the possibility of the tube clicking against other tubes. Note that some trills on the large-diameter "Shan Tubes" can be carried out with one hand, by rattling a mallet very rapidly between two adjacent tubes. At bar 177, use both hands to collide all of the large-diameter "Shan Tubes" together in an explosively violent manner; agitate them further according to the given graphics! After bar 179, the interacting "Shan Tubes" will continue to click together for at least one minute into section J! This is intentional and has been taken into account by the composer, so do not attempt to damp the resonant sound-texture of this 'super windchime'.

ShTL Specifications: six aluminium (zinc-plated?) tubes: 52 mm outer diameter, with a seam; 1.2 mm gauge. Lengths: **1** — 604 mm; **2** — 876 mm; **3** — 952 mm; **4** — 1062 mm; **5** — 1122 mm; **6** — 1372 mm. The six large-diameter "Shan Tubes" that were utilized for the world première performance of **Cycles of Vega** produced the following readily-perceived pitches (although other, more obscure resonances are present as well): **1** — A \sharp 4; **2** — A \sharp 3, [D \flat 5]; **3** — F \sharp 3, B \sharp 4; **4** — [D \sharp 3], G \sharp 4; **5** — [C \sharp 3], F \sharp 4; **6** — [F \sharp 2], B \sharp 3.

3 Suspended Cymbals: Cym:

1 Large Sizzle Cymbal: Sizz

A large, very resonant, thin sizzle cymbal, possessing a high 'sizzle' and a long decay.

1 Large Chinese Cymbal: Ch

A (very) large, resonant Chinese cymbal.

1 Very Large (Turkish) Suspended Cymbal: Susp

A very large, 'splashy' Turkish suspended cymbal, pitched somewhat below the Chinese cymbal.

PERCUSSION 2

3 Suspended Cymbals: Cym

Until bar 39 in **Cycles of Vega**, both percussionists are able to share the same set of three (suspended) cymbals, whose details are given immediately above: duplicate instruments are therefore not required (although their presence would serve to augment this piece's timbral palette).

Dove Call in C: Dove

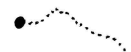
A dove call pitched at C \sharp 4, with its second-register tone (overblown attack transient) pitched at G \sharp 5. This simple wind instrument – played just once (in bars 43–45) – is suspended from a string around the percussionist's neck, being gripped in the mouth between both lips and/or the teeth. A mellow, hollow, eerie 'hooty' woodwind sound is required: acoustically, the dove call is a stopped pipe, which therefore must be blocked at its lower end. If an 'authentic' dove call is definitely unavailable, then use, as a substitute, a slide whistle (i.e. 'Swanee whistle') with its slide fastened into position once C \sharp 4 has been found. In any event, the chosen sound-producer must correctly furnish C \sharp 4! The following symbology is employed:



Attack the note strongly with the articulation phoneme 'tah', so that it overblows briefly to G \sharp 5.



An air-column vibrato, generated by pulmonary (blowing) action. Shape the vibrato's speed and depth in accordance with the sinusoidal waveform contour.



Roughly in accordance with the dotted contour, blow harder so that the dove call's C \sharp 4 rises approximately a semitone (thereby generating 'beats' with the vibraphone's C \sharp 4), then allow it to fall to at least a major second below the original C \sharp 4 – completely dying away to inaudibility. The single gesture as a whole ought to be extremely expressive!

Vibraslap: Vbslp

Select a vibraslap with as wide a dynamic- and resonance-range as possible! A metal vibraslap (with a wooden ball) is quite acceptable. This vibraslap must possess a timbre quite distinct from the vibraslap played by the other percussionist.

8 Windchimes, activated mainly by the percussionist's right hand [R.H.]:

1 Aluminium-Tube Windchime: AW *

This metallic windchime consists of six aluminium tubes: 25 mm outer diameter; 2 mm gauge. Lengths: **1** – 348 mm; **2** – 370 mm; **3** – 399 mm; **4** – 430 mm; **5** – 468 mm; **6** – 500 mm. Its large central disc, made of hard plastic, strikes each tube towards its midpoint; very little displacement of this central disc should be needed to make all of the tubes resound. The aluminium-tube windchime that was utilized for the world première performance of **Cycles of Vega** produced the following readily perceived pitches, a 'quasi-pentatonic' set (although other, more obscure resonances are also present): **1** – D \sharp 5; **2** – C \sharp 5; **3** – A \sharp 4; **4** – G \sharp 4;

5 – E \sharp 4; **6** – D \sharp 4. This windchime possesses a mellow, starry, 'soft' sound – slightly rin-like in timbre (but different to ShTS 1 and ShTS 2 [see below]); ca.30" decay!

1 Ceramic-Disc Windchime: CW *

This earthenware windchime consists of six to ten large glazed ceramic discs, which may be irregularly shaped. It should possess a rich and resonant sound – 'loud', mellow, relatively low-pitched; ca.15-20" decay.

1 Brass-Bell Windchime: BrBW

This metallic windchime consists of three tiny brass/bronze bells (without clappers) suspended in a horizontal line from a rod – with the lowest-pitched bell hung in the middle, just touching the other two bells. These bells' approximate pitches are: **1** – C \sharp 8; **2** – C \sharp 7; **3** – G \sharp 6. Their timbre should be very cutting; ca.5" decay. Jolt, displace or shake the bells' suspending rod (or the bells themselves) to trigger a sequence of echoed attacks – roughly in accord with the notated waveform contours.

1 Shell-Disc Windchime: ShW *

This 'crustaceous' windchime consists of many large discs made of shell, suspended vertically in several lines. It should possess a 'hard' moderately loud clattery sound – medium- to high-pitched; ca.5" decay.

1 Wooden-Rod Windchime: WW *

This ligneous windchime consists of many cylindrical hardwood rods. It should possess a more brittle sound than the bamboo-tube windchime described immediately below – medium- to high-pitched; ca.5" decay.

1 Bamboo-Tube Windchime: BaW *

This vegetal windchime consists of many hollow, round bamboo rods/tubes. It should possess a very dry, hollow sound – medium- to high-pitched, but lower-pitched than the wooden-rod windchimes described immediately above; ca.5" decay.

1 Sea-Urchin-Spine Windchime: SUW *

This rather rare 'echidermous' windchime consists of numerous sea-urchin spines. It should possess an extremely high, dry, delicate sound; ca.10" decay. If a sea-urchin-spine windchime cannot be obtained, then it may be replaced by a stone or glass windchime.

1 Herd-Bell Windchime: HW *

This metallic windchime consists of four quite small cylindrical iron(?) herd bells, with clappers, suspended in a circle. These herd bells' pitches are: **1** – B \flat 4; **2** – B \flat 4; **3** – A \sharp 4; **4** – G \sharp 4. Such a homespun windchime can be readily constructed by appropriately suspending four (clapped) cowbells of any type or shape – so long as they render the abovementioned pitches; ca.2" decay.

'Triangle Windchime': Δ WC *

Three triangles of different size/pitch – i.e. small, medium, and large triangles – suspended high and grouped together (as a windchime) in such a way that each triangle bangs against the others without losing much of its natural resonance.

6 Small-Diameter "Shan Tubes": ShTS

These home-made metallic percussion instruments – which resemble small-diameter tubular bells (but are instead able to swing quite freely, as a kind of windchime) – are mostly struck individually, with hard wooden cloth-covered rin beaters. The four longest tubes manifest a timbre very much like tubular bells, whilst the shortest two tubes sound slightly rin-like. It is of no consequence that "Shan Tubes" struck with rin beaters may themselves strike other "Shan Tubes" – although, if possible, this sort of knock-on effect really should not occur during low dynamic levels. A stem with a ^ drawn upon it (bar 168) denotes striking a small-diameter "Shan Tube" near its point of suspension: aside from timbral considerations, such a strike-

point minimizes the possibility of the tube clicking against other tubes. At bar 177, use both hands to collide all of the small-diameter "Shan Tubes" together in an explosively violent manner; agitate them further according to the given graphics! After bar 179, the interacting "Shan Tubes" will continue to click together for at least one minute into section J! This is intentional and has been taken into account by the composer, so do not attempt to damp the resonant sound-texture of this 'super windchime'.

ShTS Specifications: six anodized aluminium tubes: 22 mm outer diameter; 1.6 mm gauge. Lengths: **1** – 573 mm; **2** – 603 mm; **3** – 917 mm; **4** – 1041 mm; **5** – 1146 mm; **6** – 1221 mm. The six small-diameter "Shan Tubes" that were utilized for the world première performance of **Cycles of Vega** produced the following readily-perceived pitches (although other, more obscure resonances seem to be present as well): **1** – G \sharp 3, C \sharp 5; **2** – F \sharp 3, B \sharp 4; **3** – F \sharp 4; **4** – D \flat 4; **5** – A \flat 3; **6** – G \sharp 3.

7 Japanese Temple Bells (Rin): Rin

Seven small- to medium-sized Japanese 'cup bells', resting upon their traditional cushions, which radiate extremely beautiful, resonant, sparkling, microtonal bell-sounds – all of them exhibiting very long decay-times. (Their resonance-times are: **1** – 13" [ppp] to 31" [ff]; **2** – 12" [ppp] to 25" [ff]; **3** – 14" [ppp] to 28" [ff]; **4** – 15" [ppp] to 33" [ff]; **5** – 15" [ppp] to 35" [ff]; **6** – 15" [ppp] to 45" [ff]; **7** – 20" [ppp] to 55" [ff].) When the smaller rin are struck forcibly, there is a slight but possible danger that they may be overturned and tipped off their cushions. Such a calamity can be prevented simply by attaching "Velcro" (or some other adhesive device) to each rin's base and cushion – thereby physically attaching each rin to its cushion. However, the rins' resonances absolutely must not be interfered with! (It might also be advisable to fasten the rin-cushions themselves to the table with pieces of string or masking tape.) Note that some trills on the rin (e.g. bars 54–55) are to be executed with just one hand, by rattling a single rin beater rapidly between two adjacent rin. The seven rin utilized for the world première performance of **Cycles of Vega** were pitched as follows (although other, higher partials are clearly audible as well): **1** – B \flat 4; **2** – A \flat 4; **3** – G \flat 4; **4** – F \sharp 4; **5** – D \flat 4; **6** – B \flat 3; **7** – G \sharp 3.

Sleighbells: Sleigh

A lush-sounding ribbon/loop-type sleighbell consisting of many individual pellet-bell elements, suspended high and struck (almost never shaken). A ghungrü (Indian bell strap) may be substituted, if necessary.

9 Windchimes, activated mainly by the percussionist's left hand [L.H.]:

1 Wooden-Rod Windchime: WW *

This ligneous windchime consists of many cylindrical hardwood rods. It should possess a more brittle sound than the bamboo-tube windchime described immediately below – high-pitched (higher than the R.H. WW); ca.5" decay.

1 Bamboo-Tube Windchime: BaW *

This vegetal windchime consists of many hollow, round bamboo rods/tubes. It should possess a very dry, hollow sound – medium- to high-pitched, lower-pitched than the wooden-rod windchimes described immediately above, but slightly higher-pitched than the R.H. BaW; ca.5" decay.

1 Sea-Urchin-Spine Windchime: SUW *

This rather rare 'echidmous' windchime consists of numerous sea-urchin spines. It should possess an extremely high, dry, delicate sound – even higher-pitched than the R.H. SUW; ca.10" decay. If a sea-urchin-spine windchime cannot be obtained, then it may be replaced by a glass or stone windchime.

1 Shell-Disc Windchime: ShW *

This 'crustaceous' windchime consists of many small discs made of shell, suspended vertically in a circle. It should possess a 'soft', gentle, delicate, brittle but dense sound – medium- to high-pitched; ca.5" decay.

1 'Kenyan Bell Tree': KBT

This unusual metallic windchime consists of about twenty or so bronze conical and cylindrical bells (with clappers), suspended in a flat diamond-shaped frame, microtonally pitched within the range C \sharp 5 – C \sharp 7. The Kenyan bell tree's timbre should be a high-pitched, delicate, fairly dry jingle, rather cutting; ca.5" decay. Jolt, displace or shake the framework to activate the bells, in accord with the notated waveform contours. If necessary, the Kenyan bell tree may be replaced by many very high, bundled-together almglocken, or – better still – a 'string of jingle bells' (strung together as a windchime).

1 Ceramic-Disc Windchime: CW *

This earthenware windchime consists of six to ten small circular glazed ceramic discs. It should possess a rather cutting sound – relatively high-pitched; ca.10" decay.

1 Brass-Tube Windchime: BrTW *

This metallic windchime consists of ten or so small thick brass tubes (outer diameter ca.6 mm, maximum length ca.120 mm), sounding within the range C \sharp 6 – C \sharp 7: brilliant, starry, cutting, high-pitched; ca.10-15" decay. If necessary, randomly-chosen rods from a Mark Tree may be hung in a circle as a substitute for this windchime.

1 Aluminium-Tube Windchime: AW *

This metallic windchime consists of six aluminium alloy (Duralumin?) tubes: 32 mm outer diameter; ca.1.8 mm gauge. Lengths: **1** – 210 mm; **2** – 220 mm; **3** – 310 mm; **4** – 330 mm; **5** – 402 mm; **6** – 503 mm. The aluminium-tube windchime that was utilized for the world première performance of **Cycles of Vega** produced the following readily perceived pitches (although other, rather more obscure resonances are also present): **1** – B \flat 6; **2** – A \sharp 6; **3** – B \flat 5; **4** – G \sharp 5; **5** – D \flat 5; **6** – F \sharp 4, [B \flat 5]. This windchime possesses a brilliant, starry, 'hard' sound – slightly crotales-like in timbre, quite loud; ca.15" decay.

1 Brass-Disc Windchime: BrDW *

This metallic windchime consists of several thin brass discs, not necessarily regular in shape. Their timbre should be clangorous – a high-pitched, extremely resonant and rich sound; ca.5" decay.

Very Large Tam-Tam: T-T

A very large, resonant tam-tam (at least 1300 mm in diameter, if possible) – very deep, profound and mysterious! Apart from the following cases, strike the tam-tam in its usual, slightly off-centre beating-spot.



Strike the tam-tam at its central point, and strike the tam-tam away from its central point (towards its rim), respectively.

* Windchimes [Percussion 2 only]

Agitate the elements of these windchimes directly, with hand(s) or mallet(s), roughly in accord with the notated waveform contours. All windchime attacks and excitations should be varied as much as possible, subject to the indicated dynamic level.

As a rehearsal- and performance-aid, for easier readability of the numerous windchimes' notes (i.e. correctly matching these notes to their corresponding windchimes), the noteheads written upon the windchimes' staves could be colour-coded using a wide variety of highlighter pens or coloured pencils. The percussionist might even consider carefully attaching the associated colour of ribbon or a strip of coloured paper to each windchime somehow; these ribbons or paper-strips must not cause any impedance whatsoever to the windchimes' typically stochastic acoustical behaviour. (Besides being musically functional props, such visual variegations will help to impart a beneficial ambience of decorativeness and festivity!)

E-FLAT CLARINET FINGERINGS

SINGLE PITCHES AND TRILLS

left hand alone...

Left hand alone...

N N N

3

(E) C#

A^b A^b R A^b A A

KA KA

C#

N N N

right hand alone...

general (non-standard) fingerings - both hands...

right hand alone...

Handwritten musical notation for the right hand alone, showing a sequence of notes and chords on a staff. The notation includes various accidentals (sharps, flats, naturals) and fingerings (numbers 1-5) above the notes. The sequence of notes/chords is: F#4, G4, A4, B4, C5, D5, E5, F#5, G5, A5, B5, C6, D6, E6, F#6, G6, A6, B6, C7, D7, E7, F#7, G7, A7, B7, C8, D8, E8, F#8, G8, A8, B8, C9, D9, E9, F#9, G9, A9, B9, C10, D10, E10, F#10, G10, A10, B10, C11, D11, E11, F#11, G11, A11, B11, C12, D12, E12, F#12, G12, A12, B12, C13, D13, E13, F#13, G13, A13, B13, C14, D14, E14, F#14, G14, A14, B14, C15, D15, E15, F#15, G15, A15, B15, C16, D16, E16, F#16, G16, A16, B16, C17, D17, E17, F#17, G17, A17, B17, C18, D18, E18, F#18, G18, A18, B18, C19, D19, E19, F#19, G19, A19, B19, C20, D20, E20, F#20, G20, A20, B20, C21, D21, E21, F#21, G21, A21, B21, C22, D22, E22, F#22, G22, A22, B22, C23, D23, E23, F#23, G23, A23, B23, C24, D24, E24, F#24, G24, A24, B24, C25, D25, E25, F#25, G25, A25, B25, C26, D26, E26, F#26, G26, A26, B26, C27, D27, E27, F#27, G27, A27, B27, C28, D28, E28, F#28, G28, A28, B28, C29, D29, E29, F#29, G29, A29, B29, C30, D30, E30, F#30, G30, A30, B30, C31, D31, E31, F#31, G31, A31, B31, C32, D32, E32, F#32, G32, A32, B32, C33, D33, E33, F#33, G33, A33, B33, C34, D34, E34, F#34, G34, A34, B34, C35, D35, E35, F#35, G35, A35, B35, C36, D36, E36, F#36, G36, A36, B36, C37, D37, E37, F#37, G37, A37, B37, C38, D38, E38, F#38, G38, A38, B38, C39, D39, E39, F#39, G39, A39, B39, C40, D40, E40, F#40, G40, A40, B40, C41, D41, E41, F#41, G41, A41, B41, C42, D42, E42, F#42, G42, A42, B42, C43, D43, E43, F#43, G43, A43, B43, C44, D44, E44, F#44, G44, A44, B44, C45, D45, E45, F#45, G45, A45, B45, C46, D46, E46, F#46, G46, A46, B46, C47, D47, E47, F#47, G47, A47, B47, C48, D48, E48, F#48, G48, A48, B48, C49, D49, E49, F#49, G49, A49, B49, C50, D50, E50, F#50, G50, A50, B50, C51, D51, E51, F#51, G51, A51, B51, C52, D52, E52, F#52, G52, A52, B52, C53, D53, E53, F#53, G53, A53, B53, C54, D54, E54, F#54, G54, A54, B54, C55, D55, E55, F#55, G55, A55, B55, C56, D56, E56, F#56, G56, A56, B56, C57, D57, E57, F#57, G57, A57, B57, C58, D58, E58, F#58, G58, A58, B58, C59, D59, E59, F#59, G59, A59, B59, C60, D60, E60, F#60, G60, A60, B60, C61, D61, E61, F#61, G61, A61, B61, C62, D62, E62, F#62, G62, A62, B62, C63, D63, E63, F#63, G63, A63, B63, C64, D64, E64, F#64, G64, A64, B64, C65, D65, E65, F#65, G65, A65, B65, C66, D66, E66, F#66, G66, A66, B66, C67, D67, E67, F#67, G67, A67, B67, C68, D68, E68, F#68, G68, A68, B68, C69, D69, E69, F#69, G69, A69, B69, C70, D70, E70, F#70, G70, A70, B70, C71, D71, E71, F#71, G71, A71, B71, C72, D72, E72, F#72, G72, A72, B72, C73, D73, E73, F#73, G73, A73, B73, C74, D74, E74, F#74, G74, A74, B74, C75, D75, E75, F#75, G75, A75, B75, C76, D76, E76, F#76, G76, A76, B76, C77, D77, E77, F#77, G77, A77, B77, C78, D78, E78, F#78, G78, A78, B78, C79, D79, E79, F#79, G79, A79, B79, C80, D80, E80, F#80, G80, A80, B80, C81, D81, E81, F#81, G81, A81, B81, C82, D82, E82, F#82, G82, A82, B82, C83, D83, E83, F#83, G83, A83, B83, C84, D84, E84, F#84, G84, A84, B84, C85, D85, E85, F#85, G85, A85, B85, C86, D86, E86, F#86, G86, A86, B86, C87, D87, E87, F#87, G87, A87, B87, C88, D88, E88, F#88, G88, A88, B88, C89, D89, E89, F#89, G89, A89, B89, C90, D90, E90, F#90, G90, A90, B90, C91, D91, E91, F#91, G91, A91, B91, C92, D92, E92, F#92, G92, A92, B92, C93, D93, E93, F#93, G93, A93, B93, C94, D94, E94, F#94, G94, A94, B94, C95, D95, E95, F#95, G95, A95, B95, C96, D96, E96, F#96, G96, A96, B96, C97, D97, E97, F#97, G97, A97, B97, C98, D98, E98, F#98, G98, A98, B98, C99, D99, E99, F#99, G99, A99, B99, C100, D100, E100, F#100, G100, A100, B100, C101, D101, E101, F#101, G101, A101, B101, C102, D102, E102, F#102, G102, A102, B102, C103, D103, E103, F#103, G103, A103, B103, C104, D104, E104, F#104, G104, A104, B104, C105, D105, E105, F#105, G105, A105, B105, C106, D106, E106, F#106, G106, A106, B106, C107, D107, E107, F#107, G107, A107, B107, C108, D108, E108, F#108, G108, A108, B108, C109, D109, E109, F#109, G109, A109, B109, C110, D110, E110, F#110, G110, A110, B110, C111, D111, E111, F#111, G111, A111, B111, C112, D112, E112, F#112, G112, A112, B112, C113, D113, E113, F#113, G113, A113, B113, C114, D114, E114, F#114, G114, A114, B114, C115, D115, E115, F#115, G115, A115, B115, C116, D116, E116, F#116, G116, A116, B116, C117, D117, E117, F#117, G117, A117, B117, C118, D118, E118, F#118, G118, A118, B118, C119, D119, E119, F#119, G119, A119, B119, C120, D120, E120, F#120, G120, A120, B120, C121, D121, E121, F#121, G121, A121, B121, C122, D122, E122, F#122, G122, A122, B122, C123, D123, E123, F#123, G123, A123, B123, C124, D124, E124, F#124, G124, A124, B124, C125, D125, E125, F#125, G125, A125, B125, C126, D126, E126, F#126, G126, A126, B126, C127, D127, E127, F#127, G127, A127, B127, C128, D128, E128, F#128, G128, A128, B128, C129, D129, E129, F#129, G129, A129, B129, C130, D130, E130, F#130, G130, A130, B130, C131, D131, E131, F#131, G131, A131, B131, C132, D132, E132, F#132, G132, A132, B132, C133, D133, E133, F#133, G133, A133, B133, C134, D134, E134, F#134, G134, A134, B134, C135, D135

KEY VIBRATI

left hand
alone...

right hand
alone

both hands...

Handwritten musical score for "KEY VIBRATO". The score is written on a single staff with a treble clef. The notation includes various notes, rests, and trills, with many annotations above the staff. The annotations include "left hand alone...", "right hand alone", "both hands...", and "rand.". There are also many circles and arrows indicating fingerings and trills. The score is divided into several measures by vertical bar lines.

[illegible]

left hand alone...

right hand
alone (see
bar 189)

both hands...

MULTIPHONICS

Aside from the self-evident tablature pictographs and symbology, N denotes the normal or standard fingering.

*** extremely brief: a transient overblown squeak, like a very unsteady attack.

[illegible]

(33) $\text{♩} = 75$ $\text{♩} = 71$ $\text{♩} = 67$ $\text{♩} = 65$. Stable.

(37) $\text{♩} = 43$. Extremely slow, distant and dream-like: timeless and inexorable, but rhythmically precise, like a huge cosmic clockwork.

(40) $\text{♩} = 43$. Extremely slow, distant and dream-like: timeless and inexorable, but rhythmically precise, like a huge cosmic clockwork.

(48) $\text{♩} = 43$. Extremely slow, distant and dream-like: timeless and inexorable, but rhythmically precise, like a huge cosmic clockwork.

Annotations and musical notation details:

- 33:** $\text{♩} = 75$, $\text{♩} = 71$, $\text{♩} = 67$, $\text{♩} = 65$. Stable. Dynamics: $p > ppp$, p poss. $< p: pp$, p poss. $< pp: f$ poss. $> pp$, p poss. $< p$ $pp > p$ poss., mp , $mp > p$, mp . Performance notes: "see b. 8", "huh!", "K", "flz", "as before", "Sleigh", "E", "rasp", "Rand. alternation".
- 37:** $\text{♩} = 43$. Dynamics: pp , $mp < mf$, pp , mp , pp , ff , f , p . Performance notes: "Pause until the Tam-Tam resonance is 'pp' (approx.)", "teeth on reed", "Vib gliss.", "brilliant: a.f.a.p.", "cut off suddenly", "Pause until the Tam-Tam resonance is 'mp' (approx.)", "Rand. alternation", "legatissimo!", "airy", "Sffz: mf".
- 40:** $\text{♩} = 43$. Dynamics: p poss., $ppp < pp$, $ppp < p$, $mf: pp < mp$, $ppp mp: ppp < p$, pp . Performance notes: "barely (only just) audible.", "Rin", "very pure and distant", "Crot + Clw", "bend", "vib Dove", "flz", "echoing the Dove.", "5:3", "3", "Rin", "vib", "choppy", "K".
- 48:** $\text{♩} = 43$. Dynamics: $pp < p$ poss., p , ppp , p , pp , $p: pp > ppp$. Performance notes: "5:4", "vib", "KBT", "SHTS", "flz", "SHTL", "5:4", "BrDW", "Vibtr", "5:4", "air-noise", "noisy key-slaps, f poss.", "Crot", "5:4", "grace note", "on the beat."

* A rather short, indeterminate duration, like an after-resonance. Play immediately upon hearing the Chinese Cymbal attack (bar 38). Teeth on reed: very high and steady, starting pure.

** Free durations. One smooth gesture: react to one another in accordance with the given arrows; well-connected, continuous.

(88)

Handwritten musical score for system 88. The staff is in treble clef with a key signature of one sharp (F#). The tempo is marked $\text{♩} = 44$. The score includes various musical notations such as trills (tr), vibrato (vib), and dynamic markings (p, mp, mf, f, pp, ppp). Performance instructions include "very rapid", "Suv + Crot", "flz", "K", "5:4", "J", "N", "Rin", "bend", "Vib", "brilliant, agile", and "KBT". There are also diagrams of fingerings and breathings.

(96)

Handwritten musical score for system 96. The staff is in treble clef with a key signature of one sharp (F#). The tempo is marked $\text{♩} = 46$. The score includes various musical notations such as trills (tr), vibrato (vib), and dynamic markings (p, mp, mf, f, pp, ppp). Performance instructions include "SHTS", "BrDW", "Vib tr", "a.f.a.p.", "flz", "K", "5:4", "J", "N", "Rin", "bend", "Vib", "brilliant, agile", and "KBT". There are also diagrams of fingerings and breathings.

(105)

Handwritten musical score for system 105. The staff is in treble clef with a key signature of one sharp (F#). The tempo is marked $\text{♩} = 49$. The score includes various musical notations such as trills (tr), vibrato (vib), and dynamic markings (p, mp, mf, f, pp, ppp). Performance instructions include "Do not tongue.", "Rin", "flz", "K", "5:4", "J", "N", "Rin", "bend", "Vib", "brilliant, agile", and "KBT". There are also diagrams of fingerings and breathings.

(113)

Handwritten musical score for system 113. The staff is in treble clef with a key signature of one sharp (F#). The tempo is marked $\text{♩} = 53$. The score includes various musical notations such as trills (tr), vibrato (vib), and dynamic markings (p, mp, mf, f, pp, ppp). Performance instructions include "Rin", "SHTS", "flz", "K", "5:4", "J", "N", "Rin", "bend", "Vib", "brilliant, agile", and "KBT". There are also diagrams of fingerings and breathings.

Handwritten musical score for guitar, featuring measures 123, 132, 138, and 145. The score includes various musical notations, fingerings, and performance instructions.

Measure 123: Starts with a treble clef and a key signature of one flat. The notation includes a bend, a triplet of eighth notes, and a wavy line. Fingerings are indicated by dots and numbers. Performance instructions include *p*, *mp*, *pp*, and *mf*. A tempo marking of $\text{♩} = 57$ is present.

Measure 132: Features a treble clef and a key signature of one flat. The notation includes a bend, a triplet of eighth notes, and a wavy line. Fingerings are indicated by dots and numbers. Performance instructions include *p*, *mp*, *pp*, and *mf*. A tempo marking of $\text{♩} = 62$ is present.

Measure 138: Features a treble clef and a key signature of one flat. The notation includes a bend, a triplet of eighth notes, and a wavy line. Fingerings are indicated by dots and numbers. Performance instructions include *mf*, *p*, *mp*, *pp*, and *sfz*. A tempo marking of $\text{♩} = 67$ is present.

Measure 145: Features a treble clef and a key signature of one flat. The notation includes a bend, a triplet of eighth notes, and a wavy line. Fingerings are indicated by dots and numbers. Performance instructions include *mf*, *p*, *mp*, *pp*, and *sfz*. A tempo marking of $\text{♩} = 72$ is present.

Handwritten Annotations:

- Vib* (Vibrato)
- RA* (Right Arm)
- Change fingering for the pitch bend, if necessary.*
- Comb* (Comb)
- Rin* (Right Index)
- Aw* (Aw)
- Baw* (Baw)
- shTL* (Shit Left)
- flz* (Flick)
- bend* (Bend)
- tr* (Trill)
- T-T* (T-T)
- shTL S* (Shit Left S)
- Br Dw* (Br DW)
- a.f.a.p.* (as fast as possible)
- see bar 54*
- brilliant, agile*
- choppy*
- bend the pitch upwards, as far as possible.*

[illegible]

♩ = 67, Starry and shimmering: dynamically well-balanced; precise. Very intense, but becoming more and more mellow.

♩ = 59 ♩ = 58

Decrease the tempo....

(180)

Handwritten musical notation for measures 180-187. The notation includes a treble clef, a 2/8 time signature, and various musical symbols such as notes, rests, and accidentals. Above the staff, there are tempo markings (♩ = 66, 64, 62, 61, 60) and performance instructions like "Rin", "Crot", "flz", "bend", and "huh!". Dynamic markings include *Sfz: mp*, *ff*, *f*, *Mf*, *Mf: f*, *p*, *< ff*, *Sfz: p*, *< f*, and *mp*.

(188)

Handwritten musical notation for measures 188-194. The notation includes a treble clef, a 2/8 time signature, and various musical symbols. Above the staff, tempo markings (♩ = 57, 56, 55, 54, 53, 52, 51) and performance instructions like "Rin", "Crot", "flz", "bend", and "huh!" are present. Dynamic markings include *mp: p*, *pp*, *mp*, *p poss.*, *p*, *Sfz: pp*, *< mf*, *mp*, *p*, *p: mp*, *pp*, *< mf*, *Sfz: ppp*, *< mp*, and *p*.

(195)

Handwritten musical notation for measures 195-202. The notation includes a treble clef, a 2/8 time signature, and various musical symbols. Above the staff, tempo markings (♩ = 50, 48, 47, 46) and performance instructions like "Rin", "Crot", "flz", "bend", and "huh!" are present. Dynamic markings include *< mf*, *pp*, *< p*, *mp: ppp*, *p*, *pp*, *mp*, *p*, *ppp*, *< pp: pposs.*, *ppp*, *p poss.*, *pp*, *p poss.*, *pp*, *Sfz: ppp*, and *< p*.

(203)



Handwritten musical notation for measures 203-210. The notation includes a treble clef, a 2/8 time signature, and various musical symbols. Above the staff, tempo markings (♩ = 45, 44, 43) and performance instructions like "Rin", "Crot", "flz", "bend", and "huh!" are present. Dynamic markings include *PP*, *PPP*, *pp: p*, *PPP*, *< p*, *Sfz: ppp*, *< pp*, *p poss.*, *p*, *p poss.*, *p*, *mf*, *f*, *< ******, *mp: ppp*, and *p*. A section of the notation is marked "Becoming extremely distant, timeless, infinitely calm." and another section is marked "suspended time".

* Also include *oo* fleetingly [loud *q*].
 ** grace note "on the beat".
 *** push with the diaphragm: do not tongue.

*** fade in the multiphonic (legatissimo) if possible, between the two single pitches - constant fingering.
 ***** immediately cut off, by suddenly removing the instrument from between the lips! An (uncoordinated) interruption in the process, like a brilliant, blinding, convulsive wave of light!

♩ = 134. Wild, vibrant and ecstatic! Rhythmically precise.

X = rasp Vib resonators with $\bar{\cdot}$, from the leftmost ("lowest").

Crot $\frac{3}{4}$ 16 4 4 5 7 5 4

Cym 16 4 4 8 16 16 8

Vbslp Cowb (Cym)

f poss! emphasize B \sharp

As fast, violent and brilliant as possible: an utterly stinging attack. Cover the clarinet multiphonic's onset.

A extr. violent

f poss. ff mf sfz

5:4 3 5:4 3

HW F

7

Vbslp 4 4 5 2 5 7 5

Cowb 8 8 8 8 8 16 16

Cym 8 8 8 8 8 16 16

sffz ff:mp sfz mp ff sfz f mp sfz

5:4 5:4 5:4 5:4 5:4 5:4 5:4

Shw 3

B extr. Gradually decrease violent the tempo...

131 129 84w

15

Vbslp 4 4 5 2 5 7 5

Cowb 8 8 8 8 8 16 16

Cym 8 8 8 8 8 16 16

Sfz mf p sfz p mf f:f p f mf p sfz

5:4 5:4 5:4 5:4 5:4 5:4 5:4

Sleight 3

C violent

127 124 121 119 116 115 111 108

23

Vbslp 4 4 5 2 5 7 5

Cowb 8 8 8 8 8 16 16

Cym 8 8 8 8 8 16 16

mf pp sfz mp f mf mp:pp p mf

5:4 5:4 5:4 5:4 5:4 5:4 5:4

ww 3

D

90 86 83 80w

31

Vbslp 4 4 5 2 5 7 5

Cowb 8 8 8 8 8 16 16

Cym 8 8 8 8 8 16 16

mp ppp mf:mp mf ppp:p mp mp 3

5:4 5:4 5:4 5:4 5:4 5:4 5:4

Sleight 3

E = 65. Stable. leisurely

81 78 75 71 67

38

Vbslp

Cowb

Cym

Pause until the Tam-Tam resonance is 'mp' (approx.)

sizz susp 2 ch forceful

mp p mf

damp by grasping strongly with the right hand immediately after striking.

To Vib, Comb

[illegible]

59

Coil

Crot

Vib

Comb

ShTL

Cym

Handwritten musical score for Vibraphone (Vib) and other instruments. The score is divided into measures. The Vibraphone part includes various notes, rests, and dynamic markings such as *ppp*, *p*, *ppX*, and *pppX*. There are also performance instructions like "Ped." and "Shw etc.". The score includes time signatures (5/16, 2/8, 3/8, 2/8, 3/16, 2/8) and tempo markings (7:4, 7:4). The other instruments (Crot, Comb, ShTL, Cym) have minimal notation, mostly rests or single notes.

(67)

Coil

Crot

Vib

Ped.

Cowb

ShTL

Cym

7:4

Rin

SHTS

mp:p

Triwc

3

③

②

④

①

5:4

SHTS

cw

F

3

cw

②

mp

pp

1

P

2

6

3

P

Sizz

Susp

ppp

Rin

F

(75)

Coil

Crot

Vib

Ped.

Cowb

ShTL

Cym

ppp

Clar

5:4

②

③

③

①

①

②

②

①

④

p

pp

emphasize the G^h slightly.

ppp

mp

ppp

pp

P

4

P

5

4

ppp

[illegible]

⑩

Coil

Crot

Vib

Corb

ShTL

Cym

Handwritten musical score for a percussion ensemble. The score is written on six staves: Coil, Crot, Vib, Corb, ShTL, and Cym. The Vib staff includes a key signature of one flat (Bb) and a 2/8 time signature. The score is divided into measures by vertical bar lines. Various musical notations are present, including notes, rests, and dynamic markings (mp, pp, mf, f). There are also handwritten annotations such as 'Rin', 'Ped.', 'Shw etc.', and 'echo'. The score is numbered 106 in a circle on the left.

--- ♩=75 --- ♩=76 --- ♩=77 --- ♩=78 --- ♩=80 --- ♩=81 --- ♩=82 --- ♩=83 ---

Coil

Crot

Vib

Cowb

ShTL

Cym

BrTW
7
5:4

SHTS
5:4

Ped.

f

mf

f:ff

Rin

7:4

3

1

f

mf

mp

Shw etc.

3

2

8

8

8

--- ♩=85 --- ♩=87 --- ♩=88 --- ♩=89 --- ♩=90 --- ♩=92 --- ♩=94 --- ♩=96 ---

Coil

Crot

Vib

Cowb

ShTL

Cym

7:4

3

2

3

2

8

16

8

Ped.

mf

mp

f

mf

ff

ff:f

fff

Rin

SHTS

3

ff:f

fff

2

4

f

Sizz

p

susp

mf

Sizz

mp/mf

SHTS
5:4

$$- \Gamma_{=97} - - - - - \Gamma_{=99} - - - - - \Gamma_{=101} - - - - - \Gamma_{=103} \Gamma_{=105} - - - - - \Gamma_{=107} - - - - - \Gamma_{=109} - - - - - \Gamma_{=112}$$

(164)

[illegible]

"wall of sound": the action should be extremely aggressive and violent!

Pause until the overall dynamic of the Percussion resonances is 'mf' (approx.)

(172)

Coil --- ♩ = 114 --- ♩ = 117 --- ♩ = 120 --- ♩ = 123 --- ♩ = 126 --- ♩ = 127 --- [I] ♩ = 134. Stable. --- dynamic of the percussion resonances is 'mf' (approx.) ---

Crot

Vib

Comb

ShTL

Gym

Rin

BrTW

Triwc

T-T

gliss.

fff

f

f poss.

echo

mf

forceful

f poss.

fff

2/32

4/8

2/8

f poss.

Aw

Cataclysmic!

dim.

c. 2"

mf

End Rand. Vibr.

cease agitation: the random attacks will occur well beyond letter J!

* gliss. across all tubes

Collide all tubes together in an absolutely violent

Collide all tubes together in an absolutely violent manner. Continue to agitate them from time to time, causing random attacks between all tubes:
"super wind chime"!

T-T As fast, violent and brilliant as possible: an utterly stinging attack. Cover the clarinet multiphonic's onset.

⑥

10

⑮

Handwritten musical score for percussion instruments (Cym, r.h. WC, Sleigh, l.h. WC, T-T) across five systems. The score includes various musical notations such as notes, rests, and dynamic markings (f, mf, mp, pp, p, f poss., dim.). It also features tempo markings (e.g., 115, 111, 108, 106, 103, 100, 96, 92, 90, 86, 83, 81, 78, 75, 71, 67, 65) and performance instructions (e.g., 'Pause until the Tam-Tam resonance is 'mp' (approx.)', 'Strike both Shw simultaneously with Ch [Perc. 1]', 'Clar. reed-scrape', 'KBT (with Vib. glass.)', 'Place Dove between lips: unseen.'). The score is divided into sections labeled C, D, and E.

F
 $\bullet = 43$. Extremely slow, distant and dream-like: timeless and inexorable, but rhythmically precise, like a huge cosmic clockwork.

40

Dove
 r.h. WC
 ShTS
 Rin
 l.h. WC

Musical notation for system 40. Includes staves for r.h. WC, ShTS, Rin, and l.h. WC. Annotations include: "Dove", "Aw 3", "Dove", "Air", "(Drop Dove)", "very delicate.", "try to create 'beats' with the C⁴ of the Vib.", "vib", "ShTL", "6 X 4", "PPP", "PP", "BrTW", "CW", "mf:pp", "mp", "p", "PPP < PP > PPP".

47

r.h. WC
 ShTS
 Rin
 l.h. WC

Musical notation for system 47. Includes staves for r.h. WC, ShTS, Rin, and l.h. WC. Annotations include: "vib", "ShTL", "5", "16", "2 5", "2", "Clar", "vibr", "5:4", "1 7 5", "3", "pp", "p:ppp", "pp", "KBT", "BrDW".

56

r.h. WC
 ShTS
 Rin
 l.h. WC

Musical notation for system 56. Includes staves for r.h. WC, ShTS, Rin, and l.h. WC. Annotations include: "BrBW", "5:4", "ShTL", "Coil", "vib", "5", "16", "2", "4", "mp", "BrTW", "7:4", "Clar", "Shw", "PPP", "2", "3", "8", "Shw", "Suw", "Baw", "ww", "P", "Crot", "p:ppp", "p:ppp.".

Handwritten musical score for a 5-part ensemble. The parts are: r.h. WC, ΔWC, SHTS, Rin, and l.h. WC. The score includes various musical notations such as notes, rests, and dynamic markings (ppp, mp, pp). There are also performance instructions like "vib", "Clar.", and "Crot+Cowb". The score is divided into measures by vertical bar lines.

[illegible]

Handwritten musical score for a piano piece, measures 84-92. The score includes staves for right hand (WC, SHTS, Rin), left hand (WC, T-T), and a central staff. It features various musical notations such as notes, rests, dynamics (mp, pp, ppp, mf), and performance instructions like "gradually increase the tempo" and "very delicate".

92

Handwritten musical score for a 12-measure piece. The score is written on five staves: r.h. WC, SHTS, Rin, l.h. WC, and a bottom staff. The tempo is marked as ♩ = 45. The score includes various musical notations such as notes, rests, and dynamic markings (mp, pp, p). The piece concludes with a 5:4 ratio marking.

[illegible]

110

Handwritten musical score for a 5-part ensemble. The parts are: r.h. WC, AWC, SHTS, Rin, and l.h. WC. The score is divided into measures by vertical bar lines. Above the first measure, there are tempo markings: $\text{♩} = 51$, $\text{♩} = 52$, $\text{♩} = 53$ Triwc, and $\text{♩} = 54$. The score includes various musical notations such as notes, rests, and dynamic markings (mp, pp, mf, p). There are also some handwritten annotations like "ShTL", "vib", "crot", and "pp: p". The score is written on a system of five staves.

Handwritten musical score for measures 118-126. The score is written for five staves: r.h. WC, SHTS, Rin, I.h. WC, and Sleigh. The tempo markings are 55, 56, 57, and 58. The score includes various musical notations such as notes, rests, and dynamic markings (p, f, mf, mp, p:mp). The Sleigh staff is only present in measure 126.

Measures 118-126:

- Measure 118: r.h. WC (CW), SHTS (SHTL), Rin (p CW), I.h. WC (p).
- Measure 119: SHTS (CWB+Crot), Rin (vib), I.h. WC (KBT).
- Measure 120: SHTS (clar), Rin (ch), I.h. WC (mf:mp).
- Measure 121: SHTS (clar), Rin (2), I.h. WC (mp).
- Measure 122: SHTS (tCrot), Rin (BrTW), I.h. WC (p).
- Measure 123: SHTS (5), Rin (mf), I.h. WC (CWB).
- Measure 124: SHTS (vib), Rin (mf), I.h. WC (mf).
- Measure 125: SHTS (p:mp), Rin (mf), I.h. WC (mf).
- Measure 126: SHTS (p:mp), Rin (mf), I.h. WC (mf).

Handwritten musical score for measures 127-134. The score is written for five staves: r.h. WC, SHTS, Rin, I.h. WC, and Sleigh. The tempo markings are 59, 60, 61, 62, 63, and 64. The score includes various musical notations such as notes, rests, and dynamic markings (ppp, f, mf, mp, f poss.).

Measures 127-134:

- Measure 127: r.h. WC (AW delicate.), SHTS (ppp), Rin (BrTW), I.h. WC (f poss! mp mf).
- Measure 128: r.h. WC (BqW), SHTS (f), Rin (SHTL), I.h. WC (mf).
- Measure 129: r.h. WC (5), SHTS (5), Rin (5), I.h. WC (mf).
- Measure 130: r.h. WC (3), SHTS (3), Rin (3), I.h. WC (mp).
- Measure 131: r.h. WC (2), SHTS (2), Rin (2), I.h. WC (mf).
- Measure 132: r.h. WC (2), SHTS (2), Rin (2), I.h. WC (mf).
- Measure 133: r.h. WC (2), SHTS (2), Rin (2), I.h. WC (mf).
- Measure 134: r.h. WC (2), SHTS (2), Rin (2), I.h. WC (mf).

Handwritten musical score for measures 135-142. The score is written for five staves: r.h. WC, SHTS, Rin, Sleigh, and I.h. WC. The tempo markings are 65, 66, 67, 68, 69, and 70. The score includes various musical notations such as notes, rests, and dynamic markings (mf, f, mp, f poss.).

Measures 135-142:

- Measure 135: r.h. WC (vib k F), SHTS (mf), Rin (mf), Sleigh (mf), I.h. WC (mf).
- Measure 136: r.h. WC (mf), SHTS (mf), Rin (mf), Sleigh (mf), I.h. WC (mf).
- Measure 137: r.h. WC (mf), SHTS (mf), Rin (mf), Sleigh (mf), I.h. WC (mf).
- Measure 138: r.h. WC (mf), SHTS (mf), Rin (mf), Sleigh (mf), I.h. WC (mf).
- Measure 139: r.h. WC (mf), SHTS (mf), Rin (mf), Sleigh (mf), I.h. WC (mf).
- Measure 140: r.h. WC (mf), SHTS (mf), Rin (mf), Sleigh (mf), I.h. WC (mf).
- Measure 141: r.h. WC (mf), SHTS (mf), Rin (mf), Sleigh (mf), I.h. WC (mf).
- Measure 142: r.h. WC (mf), SHTS (mf), Rin (mf), Sleigh (mf), I.h. WC (mf).

144

Handwritten musical score for a percussion ensemble. The score is written on five staves: r.h. WC, SHTS, Clarinet (Clar.), Rin, and l.h. WC. The tempo is marked as 71, 72, 73, 74, 75, 76, 77, 78, 80. The key signature is B-flat major (BrBw). The score includes various musical notations such as notes, rests, and dynamic markings (f, mf, f poss.). The score is divided into measures by vertical bar lines. The first measure is marked with a 3/4 time signature. The second measure is marked with a 5/4 time signature. The third measure is marked with a 5/4 time signature. The fourth measure is marked with a 5/4 time signature. The fifth measure is marked with a 5/4 time signature. The sixth measure is marked with a 5/4 time signature. The seventh measure is marked with a 5/4 time signature. The eighth measure is marked with a 5/4 time signature. The ninth measure is marked with a 5/4 time signature. The tenth measure is marked with a 5/4 time signature. The eleventh measure is marked with a 5/4 time signature. The twelfth measure is marked with a 5/4 time signature. The thirteenth measure is marked with a 5/4 time signature. The fourteenth measure is marked with a 5/4 time signature. The fifteenth measure is marked with a 5/4 time signature. The sixteenth measure is marked with a 5/4 time signature. The seventeenth measure is marked with a 5/4 time signature. The eighteenth measure is marked with a 5/4 time signature. The nineteenth measure is marked with a 5/4 time signature. The twentieth measure is marked with a 5/4 time signature. The score includes various musical notations such as notes, rests, and dynamic markings (f, mf, f poss.). The score is divided into measures by vertical bar lines. The first measure is marked with a 3/4 time signature. The second measure is marked with a 5/4 time signature. The third measure is marked with a 5/4 time signature. The fourth measure is marked with a 5/4 time signature. The fifth measure is marked with a 5/4 time signature. The sixth measure is marked with a 5/4 time signature. The seventh measure is marked with a 5/4 time signature. The eighth measure is marked with a 5/4 time signature. The ninth measure is marked with a 5/4 time signature. The tenth measure is marked with a 5/4 time signature. The eleventh measure is marked with a 5/4 time signature. The twelfth measure is marked with a 5/4 time signature. The thirteenth measure is marked with a 5/4 time signature. The fourteenth measure is marked with a 5/4 time signature. The fifteenth measure is marked with a 5/4 time signature. The sixteenth measure is marked with a 5/4 time signature. The seventeenth measure is marked with a 5/4 time signature. The eighteenth measure is marked with a 5/4 time signature. The nineteenth measure is marked with a 5/4 time signature. The twentieth measure is marked with a 5/4 time signature.

Handwritten musical score for a percussion ensemble, featuring five staves: r.h. WC, SHS, Rin, l.h. WC, and KBT. The score includes various musical notations such as notes, rests, and dynamic markings (mp, f, f poss., mf, ff). Above the staves, a series of numbers (81, 82, 83, 85, 87, 88, 89, 90) are written, likely indicating measure numbers or time points. The notation is dense and includes many handwritten annotations and symbols.

Handwritten musical score for a percussion ensemble, labeled (16). The score is written on five staves: r.h. WC, ΔWC, SHTS, Rin, and Sleigh. Above the staves, there are tempo markings: $\text{♩} = 92$, $\text{♩} = 94$, $\text{♩} = 96$, $\text{♩} = 97$, $\text{♩} = 99$, $\text{♩} = 101$, $\text{♩} = 103$, and $\text{♩} = 105$. The score includes various musical notations such as notes, rests, and dynamic markings (mp, f, ff, mf). There are also performance instructions like "Triwc", "Clar", "Comb SHTL", "Vib", "Crot", "Ch", "hww Baw", and "Sleigh". The score is divided into measures by vertical bar lines.

(169)

Handwritten musical score for measures 169-176. The score is written for four staves: r.h. WC, ΔWC, ShTS, and Rin. The tempo markings are: ♩=107, ♩=109, ♩=112, ♩=114, ♩=117, ♩=120, ♩=123, and ♩=126. The score includes various musical notations such as notes, rests, and dynamic markings (f, ff, mp, mf, f poss.). Specific performance instructions are written above the staves, including "BrTW", "KBT", "vib", "f poss.", "f poss. mp!", "TriWC", "Clar", "Coil", "Crot", "vib", "gliss", and "f poss.". The score is divided into measures by vertical bar lines.

(177)

Handwritten musical score for measures 177-183. The score is written for four staves: r.h. WC, ShTS, Rin, and l.h. WC. The tempo markings are: ♩=127, ♩=134, ♩=66, ♩=64, and ♩=62. The score includes various musical notations such as notes, rests, and dynamic markings (f, ff, mp, mf, f poss.). Specific performance instructions are written above the staves, including "brilliant and starry", "f poss.", "dim.", "mf", "BrTW", "C2", "cease agitation; the random attacks will occur well beyond letter J!", "vib", "Crot", "Susp", "Clar", and "f poss. brilliant and starry.". The score is divided into measures by vertical bar lines.

* Collide all tubes together. Continue to agitate them from time to time, causing random attacks between all tubes: "super wind chime"!

(184)

Handwritten musical score for measures 184-190. The score is written for four staves: ΔWC, Rin, and two empty staves. The tempo markings are: ♩=61, ♩=60, ♩=59, ♩=58, ♩=57, ♩=56, ♩=55, and ♩=54. The score includes various musical notations such as notes, rests, and dynamic markings (mp, mf, f, f poss.). Specific performance instructions are written above the staves, including "TriWC", "gently agitate.", "Coil", "Crot", "Clar", "vib", and "f poss.". The score is divided into measures by vertical bar lines.

